



K4GSO.us

# The Oracle

Newsletter of the Silver Springs Radio Club

Oldest Radio Club in Marion County, FL



April 2020

## President's Message

Elbert Wilkinson, KQ3K

### A SURREAL KIND OF TIME:

Greetings everyone from deep within the bunker in my home compound where we are hunkered down! Actually, as I write this I am looking out the window on this rainy Palm Sunday morning. A month ago, who would have suspected we would be under state-wide stay-at-home quarantine orders for the entire month of April. We know the reason for the quarantine – slow the spread of the COVID-19 virus. Please stay safe, well, busy and sane!

In the March *Oracle*, many events teed up for our club were discussed. We were just about to enter our busy season. Unfortunately, Marion County Day, Florida Parks on the Air and March for Babies were all cancelled by the event sponsors because of the social distancing and quarantine restrictions. These were some of the high visibility events where the club demonstrates the art and skill of radio and emergency communications to the public. Not being able to work these events was disappointing. We also had to cancel our March general meeting as well as the upcoming April meeting. We will get through this, but it is frustrating to say the least. Hang in there, folks!

On the personal front, my wife now teaches high school from home. My son is also attending his school “virtually” but he gets to go out to work at Publix – an essential business. I now have full-time adult supervision to keep me out of trouble and out of the fridge. Like most of you under house arrest, I’m trying to stay busy working on some projects, organizing the shop and playing around with the radios. Nap time usually hits around 1:30ish.

### MEMBERSHIP:

Don’t forget, we have asked older members to adopt new members, especially those recently licensed. This is important for their success in the hobby and the club. The information and technical details can be overwhelming, so help them out. End of sermon for this month. Rinse and repeat next month!

## Next Club Meeting

### April meeting has been cancelled.

(SSRC Meets the third Tuesday of each month)

Green Clover Hall

319 SE 26<sup>th</sup> Terrace

Ocala, FL

6:00 Elmering & Socializing

7:00 Business Meeting

SSRC Board of Directors meets the first Tuesday of each month, 7:00 PM at the same location. All are welcome.

## Upcoming Events/Meetings

[Click here to sign up.](#)

[ARES Update](#) - Ron Viola, KS4SW

The next meeting TBD

[Education/Testing](#) – Jim Burgess, KN4MIV

Next testing date TBD

[Field Day 2020](#) - Chair, Wayne Brown, N4FP

Will be held at Green Clover Hall, June 27-28. Click the link above to sign up. Details will be forthcoming.

Silver Springs  
Radio Club Net  
K4GSO  
Mondays at 7:30 PM  
146.610, PL 123

President's Message (Continued)

### **HAM SCHOOL:**

On Saturday, March 28, we conducted Ham School from our homes due to the quarantine. Our objective for the day was NVIS HF antennas for local communication. As it turned out, it was another beautiful day to play with antennas. Several of the usual suspects participated – or tried to at least: Darrell Franchuk, KG4CCB; Jim Burgess, KN4MIV; Bert Garcia, N8NN; Ed Biedrecki, WB2UKX; and me. If I missed anyone, please forgive me. Several antennas were set-up and tested for operation. We didn't have much success in our efforts, so we need more work. However, Darrell authored a very thorough after-action report and Bert had two articles published in the NFL ARRL Newsletter with one focusing on a NVIS antenna design. These guys can write!

Additional sessions will continue to focus on antennas, HF digital modes, basic Linux programming for the Raspberry Pi and VHF digital modes. Carl, KC5CMX, and I were talking one day late last month and he stated that most of us have modern radios with all kinds of controls and features, many of which we never use or don't know how to. If you are a subject matter master or expert on radio control features or other facets of our hobby, please don't be shy - help us out and lead a session.

Following Ham School, I spent the rest of last weekend working the CQ-WPX-SSB contest and this weekend, the PODXS 070 31 Flavors PSK event. With the shift to FT8, it had been a while since I worked any PSK. A little variety is a good thing.

### **LICENSING CLASS:**

Last month, a Technician licensing class was held at the EOC with the club partnering with MERT. The classes were taught by Dave Gustafson, WB9EEH, and Rich Erlichman, ND4G, on Saturday, March 7th and 14<sup>th</sup>. The VE team received special dispensation to use the EOC for testing on March 21<sup>st</sup>. Twelve students sat for the exam with eight passing. Several of those who did not pass did not attend the class. One individual drove from St. Petersburg because the testing sessions in his area had been cancelled. Several of those who passed have expressed interest in joining our club. Kudos to Dave, Rich and Jim Burgess, KN4MIV, VE Team lead and Preston Bowlin, Marion County Emergency Management Director for all their efforts to make this a successful class.

### **FLORIDA QSO PARTY:**

The Florida QSO Party is still on the schedule for Saturday April 25<sup>th</sup> and Sunday the 26th. The contest will use 40, 20, 15 and 10-meter bands using only CW and SSB modes. Although we will not be able to work the event from one location using our club call, the event sponsor, Florida Contest Group, has amended this year's rules to allow for "distributed multi-ops." What this means in plain English is that we can have up to eight operators using the club call from their homes (assuming our K4GSO trustee authorizes it) with four operators on CW and four on SSB but on different bands. No two operators can be on the same mode and same band at the same time. Realistically, 10 meters will probably not be open, so we are down to a maximum of six. All operators must reside in Marion County. This group would be the official Club team.

However, nothing prevents anyone else from working the QSO Party from home stations using their individual calls.

This could be a fun event for all and since we are confined to quarters, we might as well compete.

### **FIELD DAY – JUNE 27 & 28:**

After a five year hiatus, the club is returning to Green Clover Hall where we will set-up inside the cool air-conditioned meeting room. We have suffered enough in the oppressing Florida heat and humidity over the last few years which dampened participation and nearly caused heat exhaustion and stoke for several members. The facility has been officially reserved with the County. This year's co-chairman is Wayne Brown, N4FP, who has some fresh ideas on getting us better organized. Stay tuned for details. Please sign-up to work Field Day.

### **K4GSO REPEATER:**

In case you hadn't noticed it, the repeater sounds a little different now. The main repeater, a Hytera, was acting up as many of you noted. Carl and John Cantrell swapped it out with the Yaesu Fusion repeater where it will remain while the problem is diagnosed and fixed. The current squelch tail is a little different than before, so bear with it.

We've had good participation on the Monday nets with 33 last week. That's really good and all are encouraged to check-in to test their equipment and to let everyone know they are alright during the quarantine.

President's Message (Continued)

**THE ORACLE:**

Marty Brown, N4GL, does an excellent job publishing our club newsletter. If you really want to thank her, send her an article to publish or write-up about a project you've been working on to share with the rest of the club. We are interested in what you are doing to inspire us to experiment. So, give the lady a hand and send her an article! OK?

Send to: [N4GL.MARTY@GMAIL.COM](mailto:N4GL.MARTY@GMAIL.COM)

I hope all this COVID-19 virus stuff ends soon and that all of us come through this unscathed and healthy. Stay well.

That's all for now, folks. Ham On and stay Radio-Active!

Due to the Corona Virus the **Gainesville Hamfest** on April 18, 2020 has been cancelled.

Larry Rovak, WB2SVB

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Financial Reports**

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**Staying Home**

Roger Staley, K4ZFW

During these trying times of having to stay home, I have not been bored. My wife and I have been working in the garden planting peas, beans, and tomatoes. I have been repairing old bird houses, building new bird houses, had to remove some old bird houses which are rotting and the birds do not use.

Spending lots of time on the computer reviewing Winlink making sure I know how to communicate in an emergency. Next, I will try to learn how to setup Winlink on HF.

I cannot tell you how important it is to stay home not spreading the virus or contracting the Covid19 or the flu. If you or your better half has a compromising immune system you are at risk. I have watched television until I get bored, then I work on the computer, and I get bored doing that. I want to get out of the house, but then I realize it is not safe, then reality steps in and I go back to the bird house building.

That all from the Staley.

Roger Staley, R.R.C. Reg.# 0048  
Roofing and Waterproofing Consultant  
Registered Roof Consultant

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## Choosing QSO Logging Software

by Bert Garcia N8NN

In 1983 the FCC eliminated the requirement to maintain a log of amateur radio transmissions, but today hundreds of thousands of hams still maintain a logbook. A logbook serves as an historical record of your activity reminding you of the people and places you have talked to, allows award tracking, and serves as a reference for completing QSL cards. While some hams still keep a paper log, most logging is done with software on a personal computer. This article serves as an introduction to computer logging to assist you in selecting a program that meets your needs.

Asking the question, "Which logging program should I use?" is like asking the question, "Which car should I buy?" The answer is "It depends!" By describing what many popular logging programs can do, this article will help you determine your needs and preferences. With dozens of logging software programs available, this article can only get you started on an Internet search for a product that meets your needs.

Two categories of logging software to consider are Free and Paid. Free is always nice! Just because it's free, don't assume it won't have many of the features you desire. Most Paid programs are packed with features, but some are not. If you are just starting out, I recommend you try a Free program to help you determine your requirements. Many Paid programs have a free trial period for you to evaluate the program. All popular logging programs provide a method for moving your log to another program if you decide to change. The common log interchange format is .ADI, so check for that feature.

The following are brief descriptions of the main features you may want in your logging software in addition to the usual time, date, frequency, mode, and report information:

**Radio Control** – A USB or serial connection between your radio and computer for sharing frequency and mode information automatically. This helps avoid logging errors. Radio control may even allow controlling the radio from the computer screen with a mouse or keyboard.

**QSL Tracking** – A record of cards sent and received, printing mailing labels, printing complete QSL cards, and tracking QSL managers.

**Callsign Lookup** – Integration to databases of callsign data, preferably on-line.

**Award Tracking** – A record of progress toward awards such as DXCC, WAS, WAZ, IOTA, and many specialty awards.

**DX Spotting** – An interface to DX Cluster services that announce stations on the air in real time.

**Digital Modes** – Transmitting and receiving using CW, RTTY, PSK, FT8 and many other digital modes.

**Log Sharing** – Integration to other software programs such as JT65 and FT8 to maintain a common log.

**Contesting** – Logging contacts, maintaining serial numbers, checking for duplicates, sending digital and voice contest messages, generating Cabrillo logs, and other items required for specific contests. Sharing a common log among several operating positions.

**Automatic Log Uploads** – Interfaces to LoTW, ClubLog, eQSL and other services for tracking QSOs and awards.

**Rotor Control and Antenna Selection** – The ability to automatically turn your antenna toward a specific station based on the callsign and selecting antennas based on the radio frequency.

**Multiple Radios** – Managing two radios to operate SO2R contesting.

**Band Map** – A graphical display of stations on the air from DX Cluster spots or CW Skimmer.

**World Maps** – Maps to display sunrise/sunset grey lines, azimuth and distance to DX stations, propagation paths.

Some logging software is tailored for specific tasks such as contesting, award tracking, or operating digital modes. You may want to use more than one

logging program because a program that is great for contesting may fall short on award tracking. For example, N1MM is a top-notch contesting program while ACLog by N3FJP may provide everything you need to record your day to day contacts.

Here is a brief list to get you started on your search for a logging program that meets your needs.

### Paid Programs

Amateur Contact Log ACLog

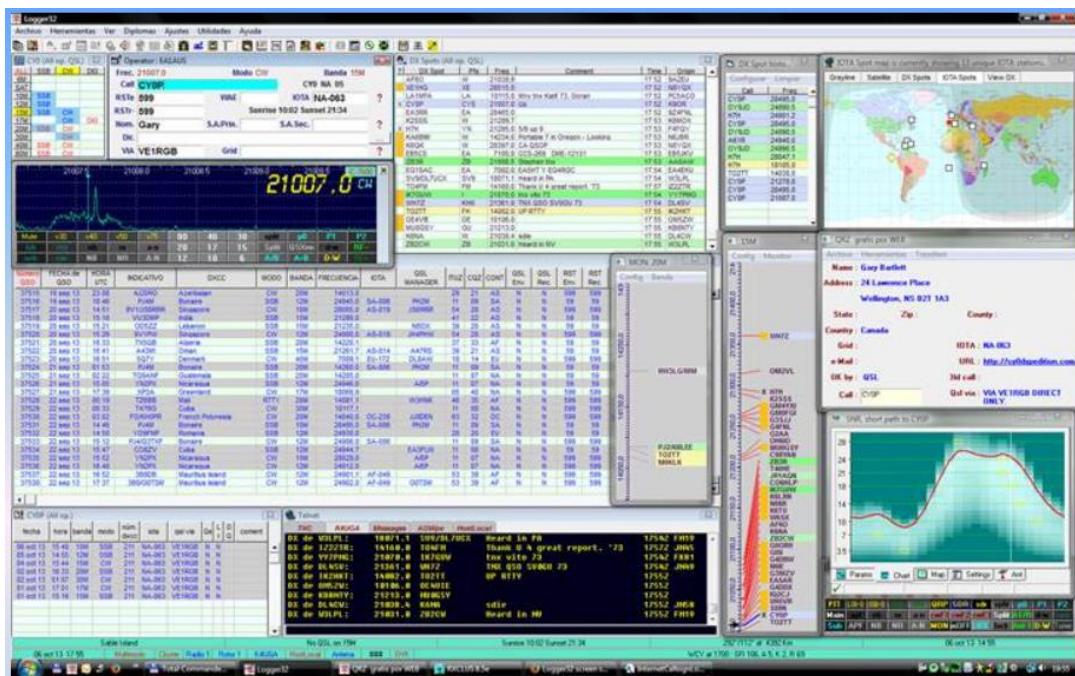
[\\$24.99](http://n3fjp.com/aclog.html)

Ham Radio Deluxe V6 HRDLog

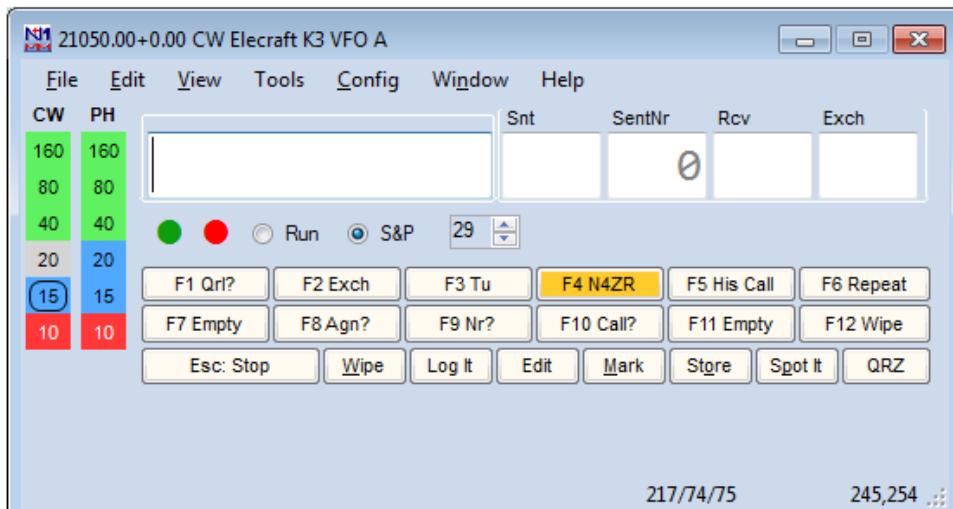
<https://www.hamradiodeluxe.com/> \$99.95 to \$124.94  
DX4Win <https://dx4win.com/> \$89.95  
DXExtreme <https://www.dxextreme.com/index.htm>  
\$89.99

### Free Programs

Logger32 <https://www.logger32.net/index.html>  
WinLog32 <http://www.winlog32.co.uk/index.htm>  
Log4om <https://www.log4om.com/welcome/>  
N1MM Logger+ <https://n1mmwp.hamdocs.com/>

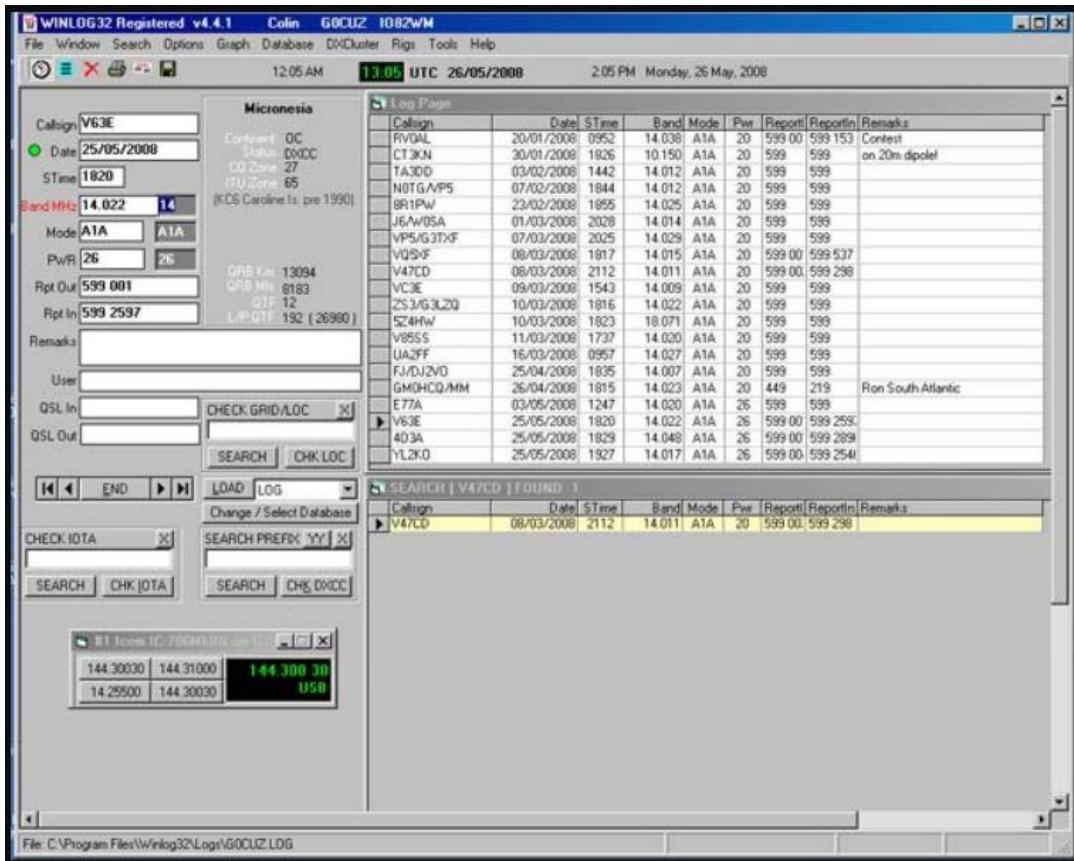


Logger32 screen shot, one of many configurations the user can arrange.

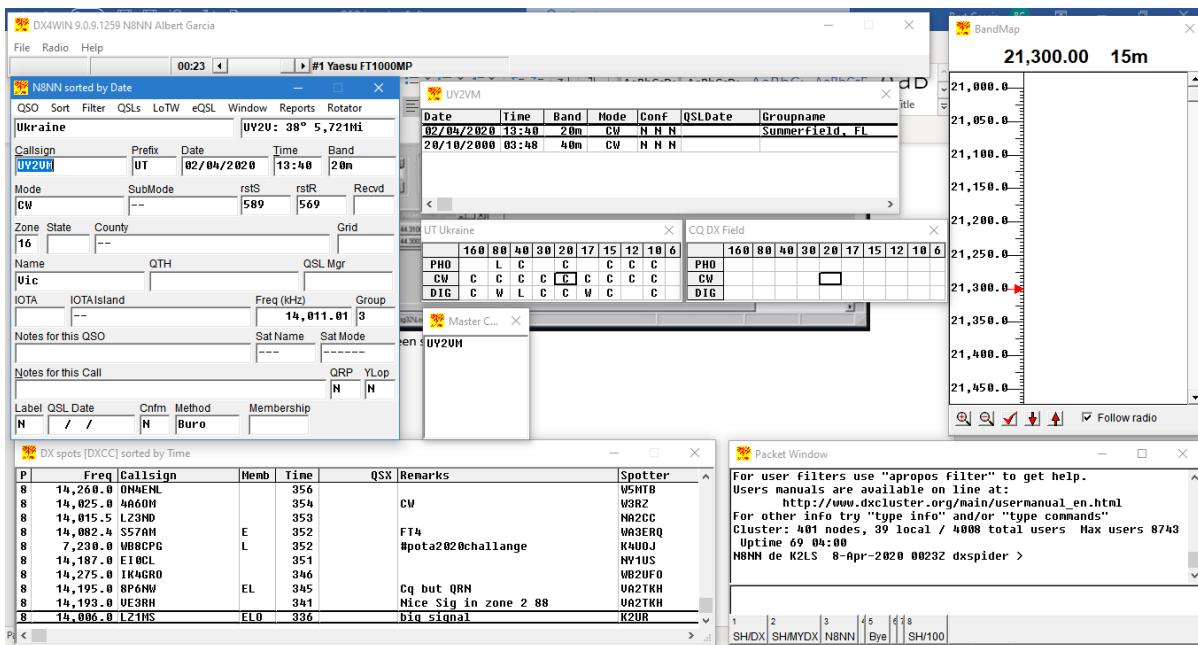


N1MM Logger+ contact entry screen, one of many screens available.

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WinLog32 screen shot.



DX4WIN screen shot, one of many configurations a user can arrange.

## How I Have Been Spending my Corona Virus Home Time

Darrell Franchuk / KG4CCB

In the past few weeks, my radio related time has been spent 1) improving my 2-meter antenna performance so that I can reliably hit the .610 repeater, 2) building an NVIS antenna for our Ham School activity, and 3) putting together a 12-volt to 5-volt power adapter for my SDR Play 1A / Pi 3 WSPR receiving station.

### 2-Meter Antenna

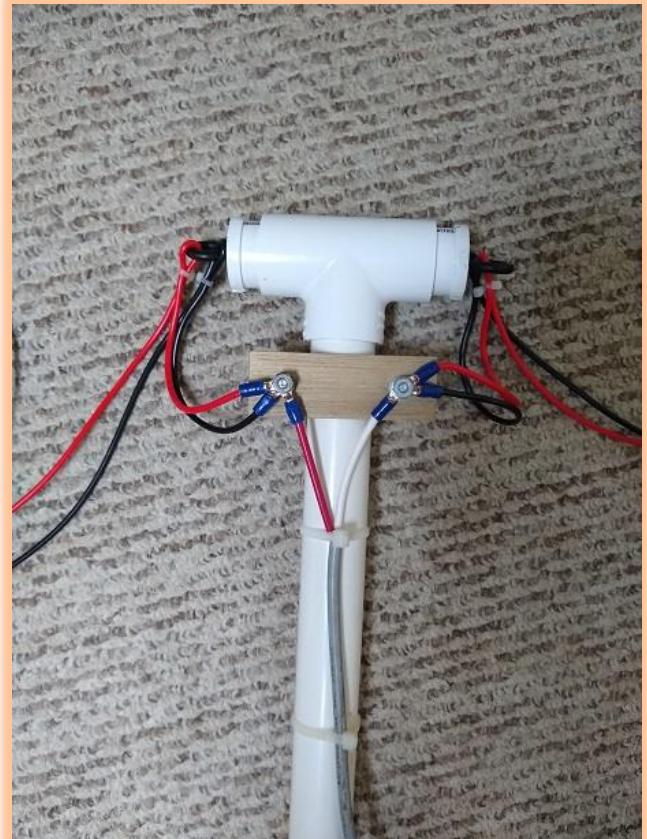
The Diamond X-50 vertical antenna I purchased in December was expected to deliver a strong signal to the .610 repeater. It was originally installed on an 8-ft fiberglass mast affixed to a satellite dish mount on the north end of the roof. It did not deliver. My first improvement was to replace the RG58X coax with DX Engineering 400 MAX low loss coax. That didn't help. Next, I purchased a 30-ft aluminum telescopic mast (five 6-ft sections) from MFJ and installed it for an antenna height of 25-ft. That didn't help much either (spotty). Next, Carl provided me with a used home-built 2-meter Yagi. It was necessary to make a new mounting bracket to accommodate my 2-in mast. After much experimentation with specific locations and heights, I finally achieved mostly reliable communications with the repeater. This took much more effort than it seems it should have.



### NVIS Antenna

In preparation for the NVIS antenna (which I had not previously heard of) Ham School activity, I followed the guidelines in a [DX Engineering paper](#). My design was modified somewhat in that I used PVC pipe for the mast and a home brew center point configuration. After erecting the antenna, I ran it with my WSPR unit to see how it performed. It was comparable to my grade mounted 14AVQ vertical. I also noted that it was much quieter than my other antennas. Unfortunately, our Ham School activity was not very successful. As Elbert noted, we need to work on improving our NVIS antenna performance.

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### SDR Play 1A / Pi 3 Power Adapter

I have been working to establish a dedicated WSPR Receiving Station in my garage office consisting of an SDR Play 1A radio paired with a Raspberry Pi 3. For an antenna I set up an MFJ EFLW at the north end of the house. To minimize electrical noise, I wanted to have a power supply independent of 120-volt outlets and wall wart adapters. To that end I put together a unit that uses a 12-vdc to 5-vdc adapter (from Amazon) and a small plastic case from Night Fire Electronics in Ocala. I am only moderately satisfied so far with the SDR Play performance using the Cubic software for the Pi 3; it works much better with SDR Uno for Windows.



## NVIS – Near Vertical Incident Skywave

by Bert Garcia N8NN

To achieve HF communication over the range of 20 to 200 miles, an antenna needs a high angle of radiation so the skywave will be reflected down a short distance from the transmitter. Vertical antennas have a low angle of radiation and are not suitable for NVIS. Horizontal dipoles close to the ground have a high angle of radiation and are good NVIS antennas. The 80 and 40-meter bands are suitable for NVIS – 40 in the daytime and 80 at night. 20 meters and above are not suitable for NVIS. Discussions about NVIS are found in the references at the end of this article.

One successful NVIS antenna is the military AS-2259 Antenna. It is two inverted-V dipoles at right angles to each other supported 8 to 15 feet high at the center. You can construct the antenna yourself following the suggestions in this article.

This version of the AS-2259 is made from two dipoles, one 50 feet long and one 76 feet long. They are mounted at right angles to each other and fed in the center directly with 50-ohm coax. Connect one leg of each dipole to the coax center conductor. Connect the other leg of each dipole to the coax shield. This is a non-resonant antenna, so an antenna tuner is required.

A top view of the antenna is shown in Figure 1.

NVIS 80-40 CROSSED INVERTED-V DIPOLES

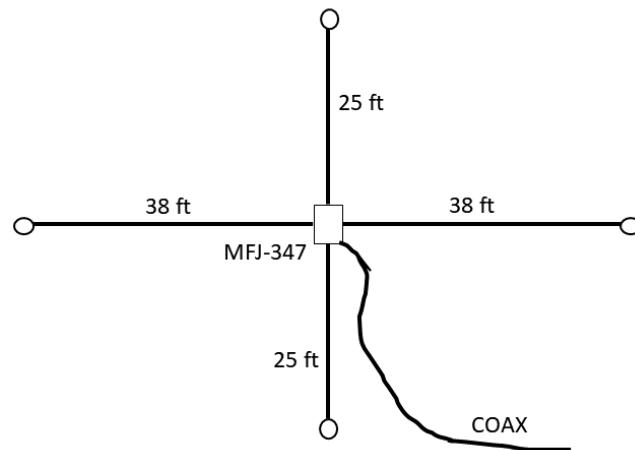


Figure 1. Top View

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A side view of each dipole is in Figures 2 and 3.

### 80 METER INVERTED-V DIPOLE

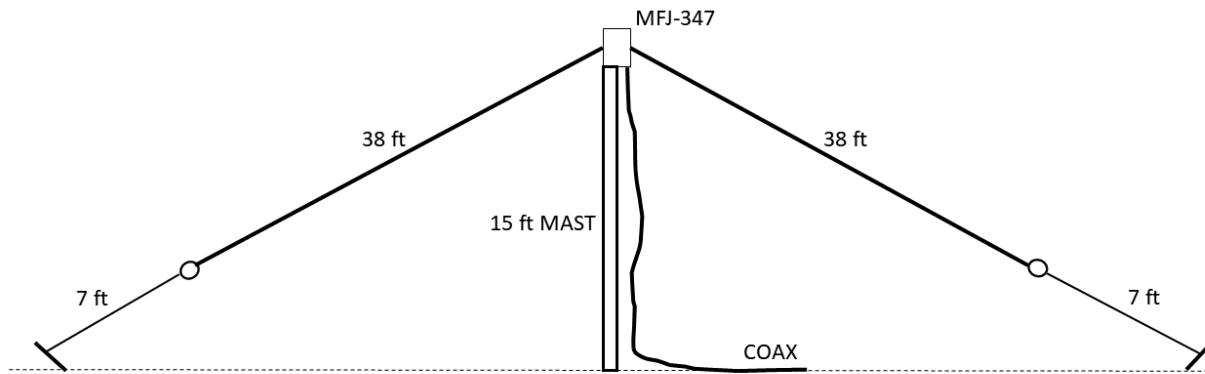


Figure 2. Side View, 80 meter dipole.

### 40 METER INVERTED-V DIPOLE

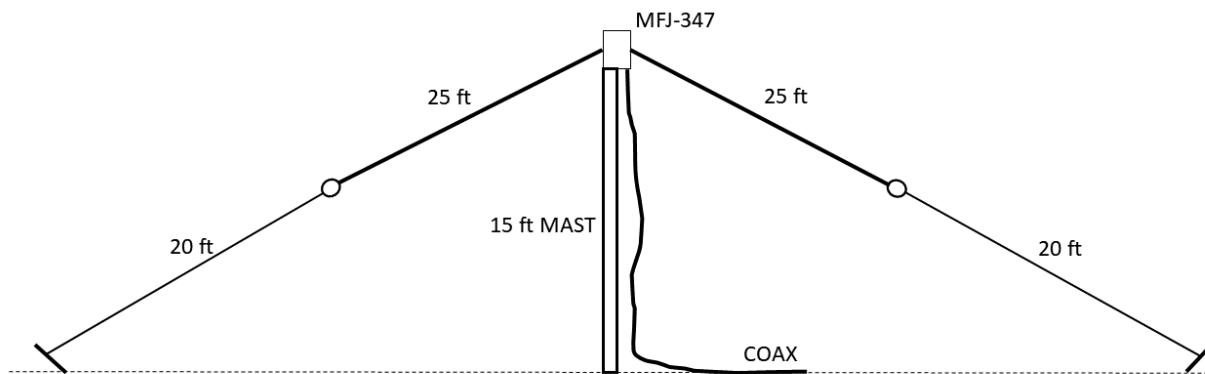


Figure 3. Side View, 40 meter dipole.

The center insulator is an MFJ-347 HF Stick Mini-Dipole Mount, but you may use any suitable center insulator you choose. The MFJ-347 was selected because it can clamp to a center support pole, has a SO-239 connector, and it has 3/8" x 24 threaded connectors to accept a bolt to attach the dipole wires. Figure 4 shows the MFJ-247 connector.

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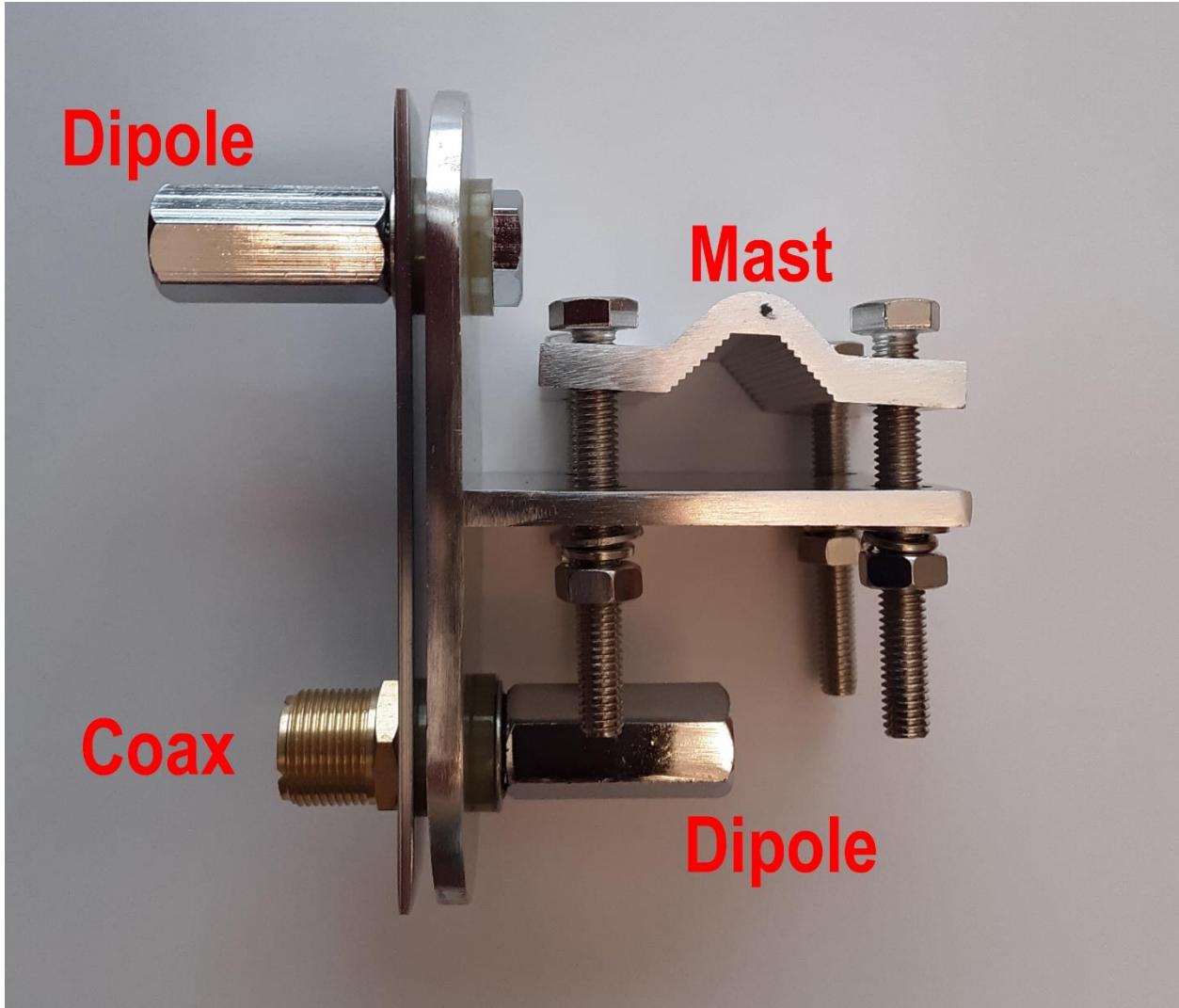


Figure 4. The MFJ-247 HF Stick Mini-Dipole Mount.

The center support should not be higher than 15 feet above ground or the high angle of radiation will be decreased. This antenna could be supported in the center by a rope from a tree; however, it may be easier to use an extendable painter's pole available from hardware stores as the support. The center support may be either non-conducting or conducting material. The coax feedline may be any convenient length, but 75 feet or more is recommended by some builders. Some builders recommend a 1:1 Unun at the feed-point; however, the SWR coax losses on 80 and 40 meters are negligible. Almost any antenna tuner will match this antenna to 50 ohms, including most transceiver internal tuners.

This antenna is intended to be a portable temporary antenna, so select components for their light weight and ease of installation. Here is a list of materials to build a portable NVIS antenna.

**Bill of Materials**

126 feet or wire, plus 2 feet extra for connections  
 54 feet or rope, plus extra to meet site requirements  
 4 ea. tent pegs  
 4 ea. end insulators  
 1 ea MFJ-247 center connector or suitable substitute  
 2 ea. bolts and 4 ea. star washers to fit 3/8" x 24 connector on the MFJ-247  
 4 ea. eye-terminals for the dipole wires  
 1 ea. center support 8-15 feet painter's pole or suitable substitute  
 Coax to reach from the antenna to the radio

You may find additional theory and recommendations from the references below. With a little ingenuity and a good junk box you can build a low-cost highly effective NVIS antenna.

**Recommended Reading**

1. NVIS HF Antenna Design, John Yaldwyn ZL4JY  
<http://arec.info/wp-content/uploads/2017/04/NVIS-HF-Antenna-Design.pdf>
2. Near Vertical Incident Skywave, Wikipedia  
[https://en.wikipedia.org/wiki/Near\\_vertical\\_incidence\\_skywave](https://en.wikipedia.org/wiki/Near_vertical_incidence_skywave)
3. Near Vertical Incident Skywave (NVIS), ARRL video  
<http://www.arrl.org/nvis>
4. Near Vertical Incident Skywave (NVIS) Antenna, DX Engineering  
[https://static.dxengineering.com/global/images/instructions/dxe-nvis-ins\\_sh.pdf](https://static.dxengineering.com/global/images/instructions/dxe-nvis-ins_sh.pdf)
5. NVIS, Ham School LLC  
<https://hamradioschool.com/nvis/>
6. AS-2259 Antenna Notes, Breckinridge Smith  
<http://k4che.com/AS-2259%20Notes/AS-2259%20Page%201.htm>

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